

Installing the Cisco Content Engine 510 and 565

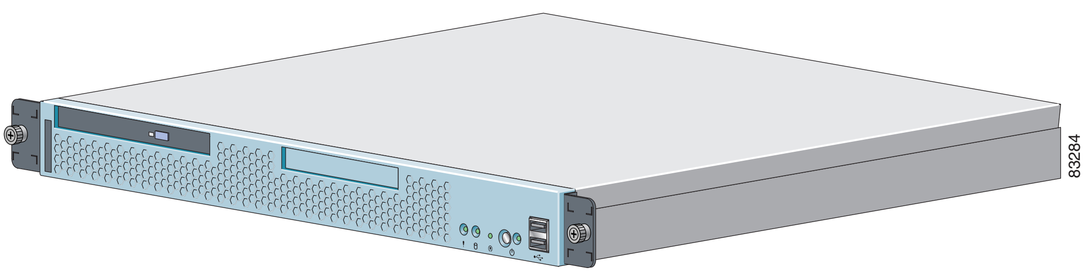
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Introduction

The Content Engine 510 and 565 (see Figure 1) are Internet content delivery devices that offer content caching, hosting, content replication, video streaming, and other content-based services. The Content Engine is positioned on the WAN edge between your small business site or enterprise network and the Internet.

Figure 1 Content Engine 510 and 565—Front View



This document explains how to install a Content Engine in an equipment rack. It also provides general instructions for installing a Content Engine on a table or workbench.

Before you begin the installation, read the *Regulatory Compliance and Safety Information for the Cisco Content Networking Product Series* document and the *Site Preparation and Safety Guide* that shipped with your chassis.

Warning **Read the installation instructions before you connect the system to its power source.**

CISCO SYSTEMS

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Contents

This document contains the following sections:

If You Need More Information

For additional information on the Cisco Content Engine 510 and 565 hardware, refer to the following documentation:

- *Cisco Content Engine 510 and 565 Hardware Installation Guide*
- *Installing Field-Replaceable Units in the Cisco Content Engine 510 and 565*

For additional information on the Cisco ACNS software, refer to the following documentation:

- For Cisco ACNS software Release 5.0:
  - *Release Notes for Cisco ACNS Software, Release 5.0*
  - *Cisco ACNS Software Deployment and Configuration Guide, Release 5.0*
  - *Cisco ACNS Software Caching Configuration Guide, Release 5.0*
  - *Cisco ACNS Software Command Reference, Release 5.0*
  - *SmartFilter for Cisco Content Engine User's Guide, Version 3.1*
- For Cisco ACNS software, Release 5.1:
  - *Release Notes for Cisco ACNS Software, Release 5.1*
  - *Cisco ACNS Software Deployment and Configuration Guide, Release 5.1*

   - *Cisco ACNS Software Caching and Streaming Configuration Guide, Release 5.1*
   - *Cisco ACNS Software Command Reference, Release 5.1*
- For information about configuring the Websense software, go to the following web site:
  http://www.websense.com
- For information about configuring the SmartFilter software, go to the following web site:
  http://www.securecomputing.com

Warning Definition

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Waarschuwing **BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES

Varoitus **TÄRKEITÄ TURVALLISUUSOHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

SÄILYTÄ NÄMÄ OHJEET

Attention **IMPORTANTES INFORMATIONS DE SÉCURITÉ**

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS

Warnung **WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

Avvertenza **IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI

Advarsel **VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia!

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES

Varning!

VIKTIGA SÄKERHETSANVISNINGAR

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

SPARA DESSA ANVISNINGAR

Figyelem

FONTOS BIZTONSÁGI ELOÍRÁSOK

Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение

ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告

重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告 安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

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Description

This document describes the following Content Engine models:

Model	Product Number
Content Engine 510	CE-510A-80GB-K9 CE-510A-160GB-K9
Content Engine 565	CE-565A-72GB-K9 CE-565A-144GB-K9

The Content Engine 510 and 565 are configured for AC-input power and have a single AC-input power supply.

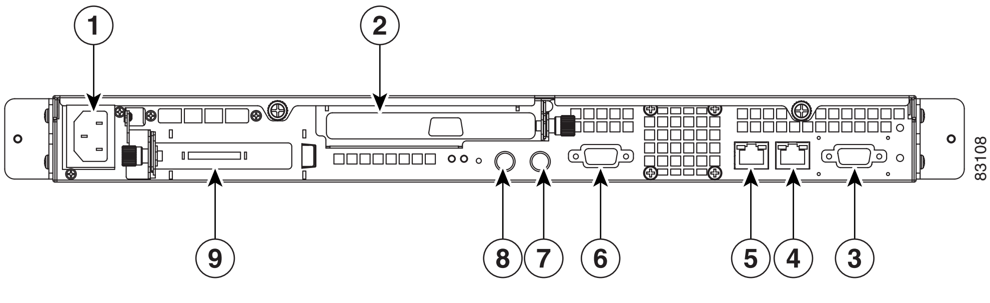
Your Content Engine comes with an integrated dual-port Ethernet controller. This controller provides an interface for connecting to 10-Mbps, 100-Mbps, or 1000-Mbps networks.

The Content Engine has two 10BASE-T/100BASE-TX/1000BASE-TX Ethernet ports with RJ-45 receptacles. Both Ethernet ports support autodetect speed mode and full-duplex operation, which enables simultaneous transmission and reception of data on the Ethernet LAN.

In addition, the Content Engine 565 is configured with one Ultra320 low voltage differential (LVD) Small Computer System Interface (SCSI) connector for attaching the Cisco Storage Array. The SCSI adapter card is installed in PCI slot 2.

Figure 2 calls out the locations of the slots, ports, and receptacles on the Content Engine back panel.

Figure 2 Content Engine 510 and 565 Back Panel



1	AC power receptacle	**2**	PCI slot 1; Fibre Channel or MPEG A/V decoder ports
3	Serial port	**4**	Ethernet 2 receptacle
5	Ethernet 1 receptacle	**6**	Onboard video port (not supported)
7	Mouse port (not supported)	**8**	Keyboard port (not supported)
9	PCI slot 2; SCSI adapter and port (CE-565 only)		

Models can be configured with either a Fibre Channel card or an MPEG A/V decoder card. These cards are user-replaceable and are installed in Peripheral Component Interconnect (PCI) slot 1 (labeled 2 in Figure 2).

Figure 3 shows the Content Engine with a Fibre Channel card installed, and Figure 4 shows the Content Engine with an MPEG A/V decoder card installed.

Figure 3 Content Engine 510 and 565 Back Panel—Fibre Channel Card Installed

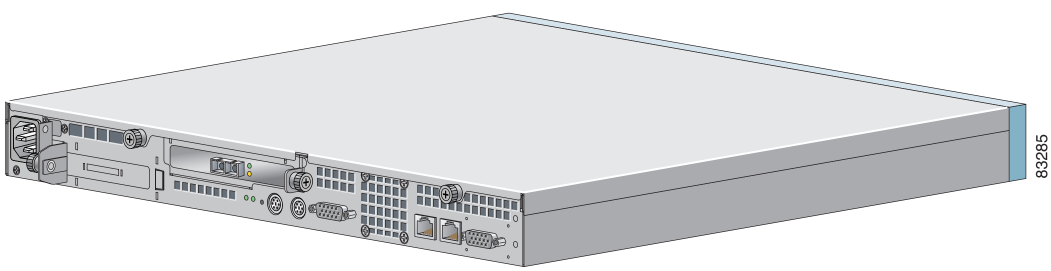
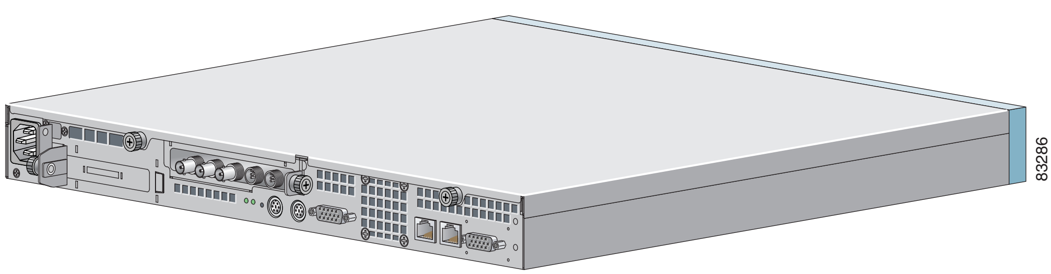


Figure 4 Content Engine 510 and 565 Back Panel—MPEG A/V Decoder Card Installed



Installation Prerequisites

Consider the following prerequisites before installing your Content Engine.

Tools and Parts Required

A sliding rail rack-mount kit and cable management assembly are included in your shipping container accessory box. The rack-mount kit is suitable for mounting Content Engine 510 and 565 units in 19-inch (48.26-cm) 4-post equipment racks.

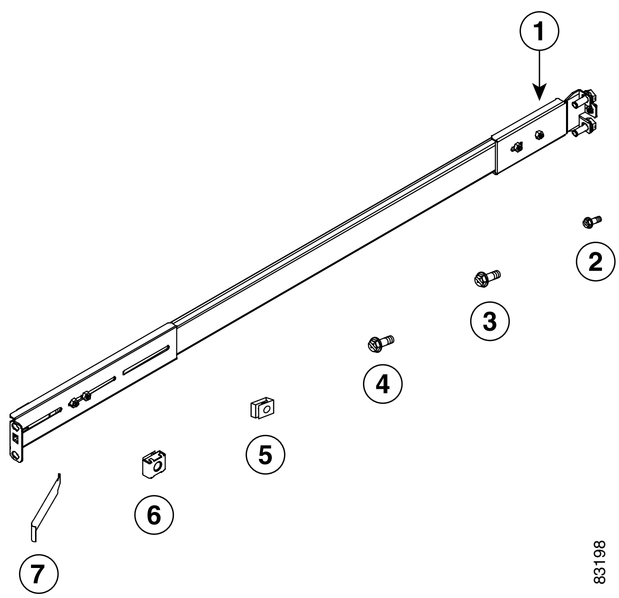
Note A 2-post rack-mounting option contains angle brackets for attaching the chassis to a 2-post rack.

You need the following tools for the installation:

- Flat-blade screwdriver
- Phillips screwdriver

Figure 5 shows the parts that you need to install the Content Engine in an equipment rack. If any parts are missing or damaged, contact your place of purchase.

Figure 5 Rack Installation Kit



1	Slide rail assemblies (2)	**2**	M3.5 screws with lock washers (3)
3	M4 screws (6)	**4**	M6 screws (10)
5	Clip nuts (10)	**6**	Cage nuts (10)
7	Cage nut insertion tool (1)		

Note The right and left slide rails are identical.

Safety Guidelines

To reduce the risk of bodily injury, electrical shock, fire, and damage to the equipment, observe the following precautions.

Warning **Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

Warning **The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.**

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.**

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.**

Warning **This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.**

Warning **Class 1 laser product.**

General Precautions

Observe the following general precautions for using and working with your system:

- Observe and follow service markings. Do not service any Cisco product except as explained in your system documentation. Opening or removing covers that are marked with the triangular symbol with a lightning bolt may expose you to electrical shock. Components inside these compartments should be serviced only by an authorized service technician.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part, or contact your authorized service provider:
  - The power cable, extension cord, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Keep your system components away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment.
- Do not push any objects into the openings of your system components. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with other Cisco-approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- Use the correct external power source. Operate the product only from the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service representative or local power company.
- Use only approved power cables. If you have not been provided with a power cable for your Content Engine or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system components and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cord, use a three-wire cord with properly grounded plugs.
- Observe extension cord and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cord or power strip does not exceed 80 percent of the extension cord or power strip ampere ratings limit.
- Do not use appliance or voltage converters or kits sold for appliances with your product.
- To help protect your system components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position cables and power cords carefully; route cables and the power cord and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your system components' cables or power cord.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local or national wiring rules.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside your system. To prevent static damage, discharge static electricity from your body before you touch any of your system's electronic components. You can do so by touching an unpainted metal surface on the chassis.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component in your system. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

Rack-Mounting Considerations

Before installing your Content Engine in a rack, review the following guidelines:

- Two or more people are required to install the device in a rack.
- Ensure that the room air temperature is below 95°F (35°C).
- Do not block any air vents; usually 6 inches (15 cm) of space provides proper airflow.
- Plan the device installation starting from the bottom of the rack.
- Install the heaviest device in the bottom of the rack.
- Do not extend more than one device out of the rack at the same time.
- Remove the rack doors and side panels to provide easier access during installation.
- Connect the Content Engine to a properly grounded outlet.
- Do not overload the power outlet when installing multiple devices in the rack.
- Do not place any object weighing more than 110 lb (50 kg) on top of rack-mounted devices.

Operating Specifications

Table 1 describes the physical and operating specifications of the Content Engine 510 and 565.

Table 1 Content Engine 510 and 565 Operating Specifications

Specification	Description
Dimensions	• Height: 1.75 in., 1 RU (44 mm) • Depth: 16.54 in. (420 mm) • Width: 16.69 in. (424 mm)
Weight	Maximum weight: 28 lb (12.7 kg) depending on your configuration
Power supply	203 watt (110 or 220 VAC auto-sensing)

Table 1 Content Engine 510 and 565 Operating Specifications (continued)

Specification	Description
Electrical input	• Sine-wave input (47–63 Hz) required • Input voltage low range: – Minimum: 100 VAC – Maximum: 127 VAC • Input voltage high range: – Minimum: 200 VAC – Maximum: 240 VAC • Input kilovolt-amperes (kVA), approximately: – Minimum: 0.087 kVA – Maximum: 0.150 kVA
Ports	• 10BASE-T, 100BASE-TX, 1000BASE-TX (dual) Ethernet ports • Serial port • 2 USB[1] ports • Ultra160 SCSI port (CE-565 only) • Fibre Channel port (on optional card) • MPEG A/V decoder port (on optional card): – 3 BNC[2] connectors for YUV, RGB[3], and composite video output – Mini-XLR 8-pin connector for S/PDIF[4] and analog stereo audio output – Mini-XLR 8-pin connector for VGA[5] output
Temperature	• Content Engine on: 50 to 95°F (10 to 35°C) • Content Engine off: –40 to 140°F (–40 to +60°C)
Humidity	• Content Engine on: 8 to 80% • Content Engine off: 8 to 80%
Altitude	Maximum altitude: 6500 ft (2000 m)
Acoustical noise emissions	• Sound power, idling: 6.5 bel maximum • Sound power, operating: 6.5 bel maximum

1. USB = Universal Serial Bus
2. BNC = Bayonet-Neill-Concelman
3. RGB = red green blue
4. S/PDIF = Sony/Phillips Digital Interface
5. VGA = video graphics array

Installing a Content Engine 510 or 565 Unit

Place the unit in the desired location. You can mount it in a rack for your convenience, or place it on a solid, stable surface. If you do not plan to install the Content Engine in an equipment rack, proceed to the "Installing the Chassis on a Tabletop" section on page 18.

Racks are marked in vertical increments of 1.75 inches (4.44 cm). Each increment is referred to as a rack unit (RU). A 1-RU device is 1.75 inches (4.44 cm) tall.

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

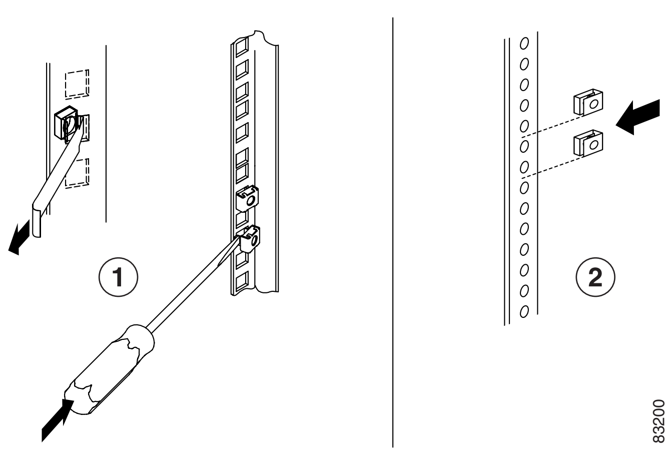
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

To install the Content Engine in the rack, follow these steps:

Step 1 Select a 1-RU-size location in the rack. Starting with the right front side of the rack (as viewed from the front of the Content Engine), install a clip nut or cage nut in the top and bottom positions of the 1-RU location that you selected (see Figure 6) and then install a clip nut or cage nut in the corresponding positions on the rear of the rack.

Repeat this step for the left front side of the rack and the corresponding location on the rear of the rack.

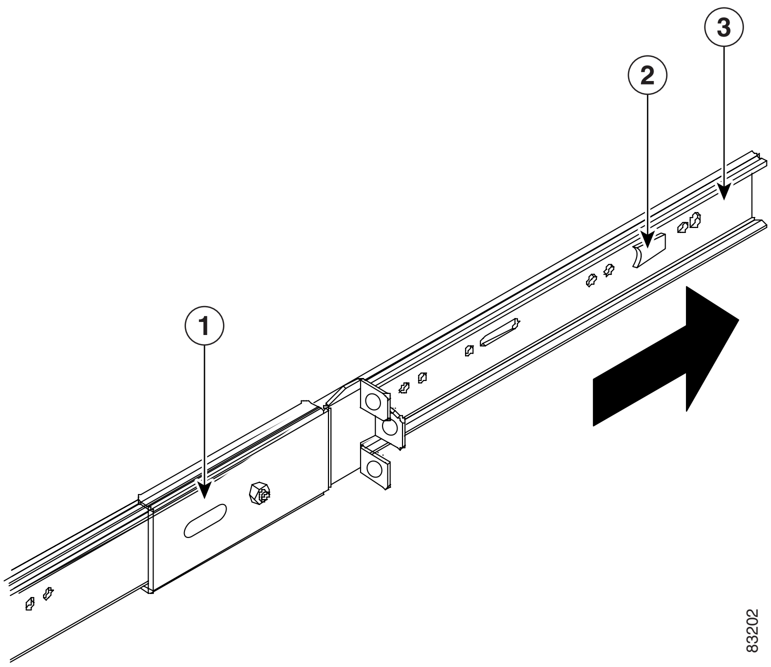
Figure 6 Installing Clip Nuts or Cage Nuts



1	Cage nuts	**2**	Clip nuts

Step 2 Remove the inner slide rails (labeled 3 in Figure 7) from the slide rail assemblies by pressing the release latches (labeled 2 in Figure 7) on the sides of the slide rail assemblies.

Figure 7 Removing the Inner Slide Rail

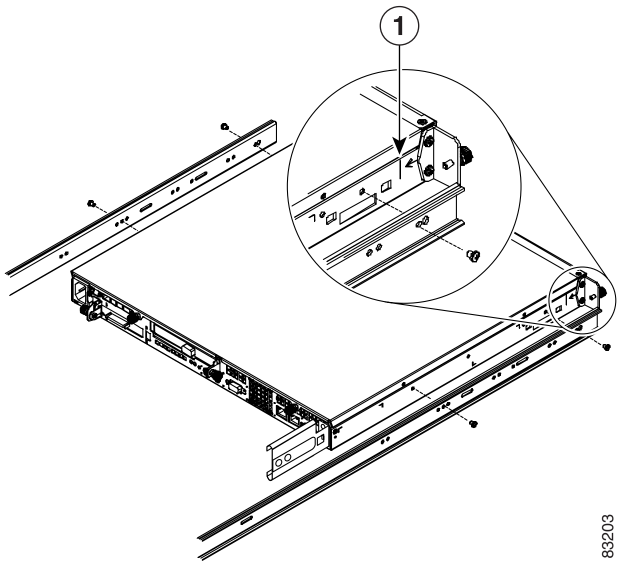


1	Slide rail assembly	**2**	Release latch
3	Inner slide rail		

Step 3 Place an inner slide rail at the alignment marker (labeled 1 in Figure 8) as indicated by the arrow on the side of the Content Engine. Use two M4 screws to secure the inner slide rail to the Content Engine.

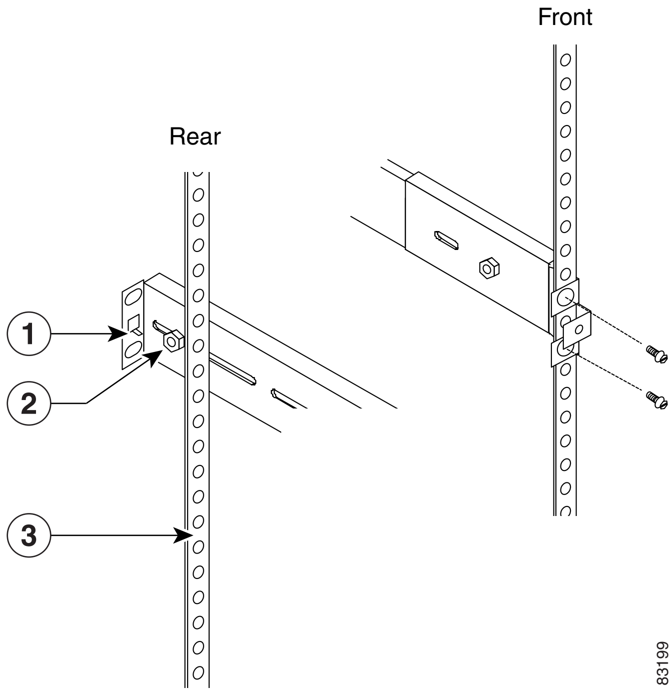
Repeat this step to attach the other inner slide rail to the Content Engine.

Figure 8 Attaching the Inner Slide Rail to the Content Engine



Step 4 Insert the tab (labeled 1 in Figure 9) on the rear of the slide rail assembly through the center hole between the two clip nuts or cage nuts on the rear flange.

Figure 9 Attaching the Slide Rails to the Rack



1	Tab	**2**	Adjustment screw
3	Rear flange		

Step 5 Align the slide rail assembly to the front flange on the rack and insert and tighten two M6 screws to secure the slide rail to the front flange. (See Figure 9.)

Note If it is necessary to adjust the length of the slide rail, loosen the adjustment screw (labeled 2 in Figure 9) in on the rear of the slide rail and then adjust the length of the slide rail and tighten the adjustment screw.

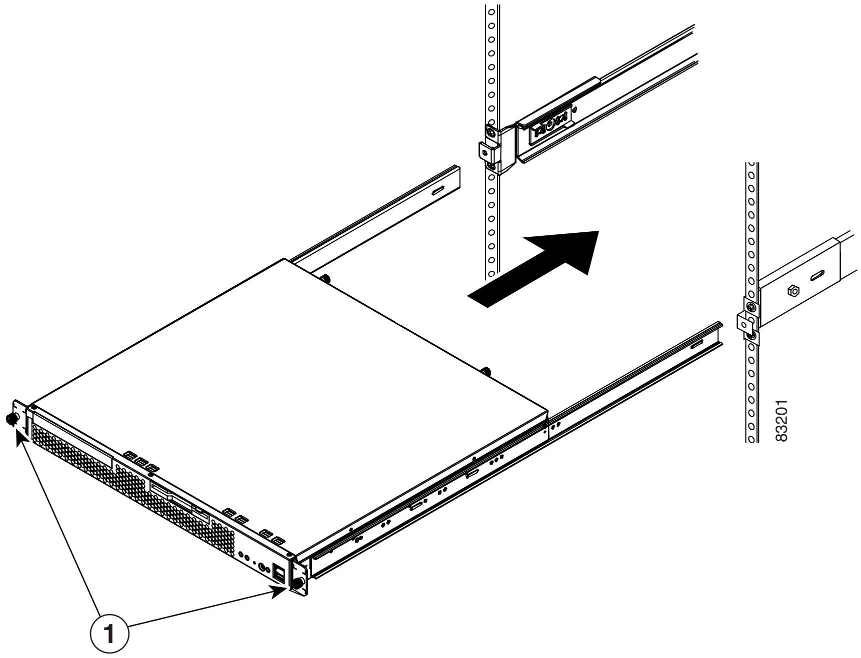
Repeat Step 4 and Step 5 to install the other slide rail assembly.

Step 6 Align and insert the inner slide rails into the slide rail assemblies until they lock into place.

Step 7 Slide the Content Engine into the rack until the Content Engine locks into place.

Step 8 Tighten the captive screw (labeled 1 in Figure 10) on each side of the front of the Content Engine to secure the Content Engine to the rack.

Figure 10 Inserting the Inner Slide Rails



Step 9 Attach the power cords and the Ethernet cables to the Content Engine. (See the "Connecting Cables" section on page 19.)

Because the Content Engine does not contain cable retention brackets or cable strain relief brackets, you must first bundle the external cables before you route them.

To remove the Content Engine from the rack, reverse these instructions. Store these installation instructions with your Content Engine documentation for future use.

Installing the Chassis on a Tabletop

When you install a Content Engine on a workbench or tabletop, ensure that the surface is clean and in a safe location and that you have considered the following:

- The chassis should be installed off the floor. (Dust that accumulates on the floor is drawn into the interior of the chassis by the cooling fans. Excessive dust inside the Content Engine can cause overtemperature conditions and component failures.)
- There must be approximately 19 inches (48.26 cm) of clearance at the front and rear of the chassis for accessing network cables or equipment.
- The Content Engine must receive adequate ventilation (it is not being installed in an enclosed cabinet where ventilation is inadequate).

Follow these steps to install the Content Engine on a workbench or tabletop:

Step 1 Remove any debris and dust from the tabletop or workbench, as well as from the surrounding area. Also make sure that your path between the Content Engine and its new location is unobstructed.

Step 2 Attach the rubber feet to the bottom of the chassis. The rubber feet have an adhesive backing. Peel the protective tape off the adhesive and stick the feet to the bottom of a clean chassis surface. Place one foot in each corner.

Step 3 Place the chassis on the tabletop or workbench.

Step 4 Ensure that no exhaust air from other equipment is being drawn into the chassis. Also, ensure that there is adequate clearance at the front and rear of the chassis.

Connecting Cables

Follow these steps to connect network, console, and SCSI cables to your Content Engine.

Note The SCSI cable is part of the Cisco Storage Array accessory kit. If you did not order the Cisco Storage Array, you did not receive a SCSI cable.

Step 1 For network connections, insert a Category 5 UTP cable into the Ethernet 1 or Ethernet 2 receptacle on the Content Engine back panel. (See Figure 2.)

Step 2 Connect the other end of the network cable to a hub or switch in your network.

Step 3 For console connections, plug the serial cable into the serial port on the Content Engine back panel.

Step 4 Connect the other end of the console cable to a console or a communications server.

Step 5 If you are using a Cisco Storage Array as an external storage device, attach the SCSI cable to the SCSI LVD port.

Caution Make sure to tighten the jackscrews on the SCSI cable.

Step 6 Connect the other end of the SCSI cable to the appropriate port on your Storage Array.

For further information about the Cisco Storage Array, refer to the *Cisco Storage Array Installation and Configuration Guide* publications.

Connecting Power and Booting the System

Follow these steps to connect power to your AC system:

Step 1 Review the information in the "Safety Guidelines" section on page 10.

Step 2 Plug the AC power cord into the power cord receptacle at the back of the Content Engine. (See Figure 2.)

Step 3 Connect the other end of the power cord to a power source at your installation site.

Step 4 Power up all externally connected devices.

Step 5 Press the power control button on the front of the Content Engine.

The system should begin booting. Once the operating system boots, you are ready to initialize the basic software configuration. (Refer to the software configuration guide or user guide that shipped with your system.)

Note While the Content Engine is powering up, the green power LED (labeled 4 in Figure 11) is on.

Note You can install a circular disk over the power control button to prevent accidental manual power down. This disk, known as the power control button shield, comes with your Content Engine.

Checking the LEDs

When the Content Engine is up and running, observe the front and back panel LEDs to verify that your system is operating properly.

Figure 11 shows the location of front panel LEDs, and Table 2 describes their function.

Figure 11 Front Panel LEDs

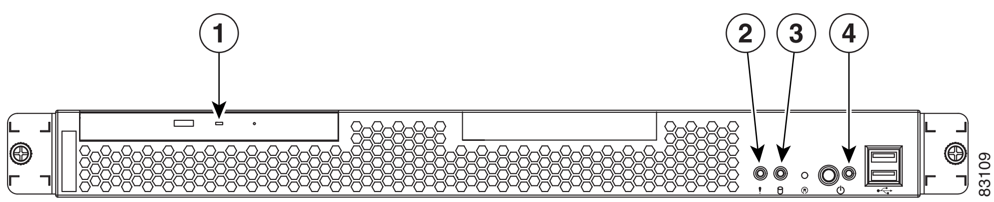


Table 2 Front Panel LEDs

Indicator		Color	State	Description
1	CD-ROM drive activity	Green	On	The CD-ROM drive is in use.
2	System error	Amber	On	A system error has occurred. An LED on the diagnostic LED panel is also on to further isolate the error.
3	Hard disk drive activity	Green	Flashing	The associated hard disk drive is in use.
4	Power	Green	On	Power is flowing to the Content Engine.
			Flashing	The Content Engine is in standby mode.

Figure 12 shows the location of back panel LEDs, and Table 3 describes the LED functions.

Figure 12 Back Panel LEDs

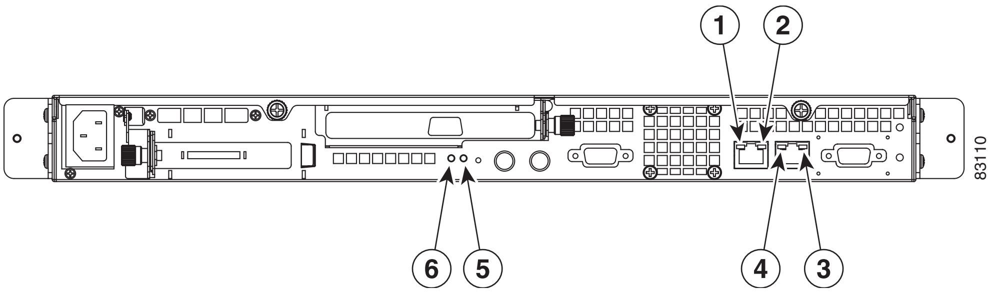
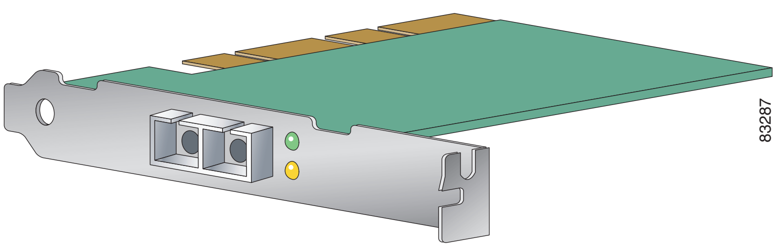


Table 3 Back Panel LEDs

Indicator		Color	State	Description
1	Ethernet 1 link	Green	On	Indicates that the speed of the Ethernet LAN is 1000BASE-TX.
			Off	Indicates that the speed of the Ethernet LAN is 10/100BASE-TX.
2	Ethernet 1 activity	Green	Blinking	Indicates that Ethernet port 1 has an active connection to the LAN.
3	Ethernet 2 activity	Green	Blinking	Indicates that Ethernet port 2 has an active connection to the LAN.
4	Ethernet 2 link	Green	On	Indicates that the speed of the Ethernet LAN is 1000BASE-TX.
			Off	Indicates that the speed of the Ethernet LAN is 10/100BASE-TX.
5	Power	Green	On	Indicates that the Content Engine power is on.
6	System Error	Amber	Blinking	Indicates a memory or fan error.

Figure 13 shows LEDs on the Fibre Channel card, and Table 4 describes the LED activity.

Figure 13 Fibre Channel Card LEDs



Note In the illustration, the top LED is green, and the bottom LED is amber.

Table 4 Fibre Channel Card LEDs

LED	State	Meaning
Green Amber	On On	Power is on.
Green Amber	On Off	Fibre Channel is on line.
Green Amber	Off On	Signal acquired (the Fibre Channel card firmware is performing or waiting to perform Fibre Channel loop initialization).
Green Amber	Off Flashing	Loss of synchronization.
Green Amber	Flashing Flashing	Firmware error.

Accessing the ACNS Software on the Content Engine

The Content Engine uses the Cisco Application and Content Networking System (ACNS) software for configuration and deployment of an Application and Content Network (ACN). The ACNS software includes both a graphical user interface, accessible through a web browser, and a command-line interface (CLI), either of which can be used to configure the software. For more information about accessing and configuring the ACNS software, refer to the *Cisco ACNS Software Deployment and Configuration Guide* that is appropriate for the version of ACNS software running on your Content Engine.

To use the ACNS software CLI, you must connect to the Content Engine either through a Telnet session from a PC, or by connecting a PC or terminal to the Content Engine console port.

Connecting a PC to the Content Engine

To access the ACNS software on the Content Engine through the console port on the Content Engine, you must connect the Content Engine to a terminal or PC. The console cable and adapter required for this connection are included with the Content Engine.

To connect to the Content Engine using a PC, the PC must have some type of terminal emulation software installed. The terminal emulation software should be configured with the following parameters:

- 9600 baud
- 8 data bits
- No parity bits
- 1 stop bit

To connect the Content Engine to a terminal or PC, follow these steps:

Step 1 Connect the blue console cable to the blue console port on the back of the Content Engine.

Step 2 Connect the DB-9 end of the console cable to the console port (also called the serial port) on your PC. If this adapter does not fit your PC console port, you must provide an adapter that fits.

Removing or Replacing a Content Engine

Warning **Before working on a system that has an On/Off switch, turn OFF the power and unplug the power cord.**

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.**

To remove a Content Engine from your network, power it down, disconnect the power cords and network cables, and physically remove the chassis from the rack.

The Content Engine is in constant communication with the router on your network; thus, when the router notices that the Content Engine is no longer responding to it, the router stops sending requests to the Content Engine. This is transparent to users. If other Content Engines are attached to the router, the router continues sending requests to the other Content Engines.

When you remove a Content Engine, the pages that were cached on that device are no longer available to the router or other Content Engines. Thus, you might see an increase in outgoing web traffic that might have otherwise been fulfilled by the Content Engine that you are removing. However, after a time, the router and other Content Engines redistribute the load of web traffic.

If you remove the last Content Engine from your network, you can also disable cache support on the router. However, this is not necessary; having cache support enabled when there are no Content Engines attached has no effect on the router's performance.

To replace a Content Engine, remove it from the network. Then, install a new Content Engine and configure it using the same configuration parameters (IP address, and so forth) that you used for the removed Content Engine.

Cisco One-Year Limited Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranty applicable to Cisco software, is included on the CD that accompanies your Cisco product. Follow these steps to access and download the *Cisco Information Packet* and your warranty document from the CD or from Cisco.com.

1. Launch your browser, and go to this URL:

   http://www.cisco.com/univercd/cc/td/doc/es_inpck/cetrans.htm

   The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:

   a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-02C0 is highlighted.

   b. Select the language in which you would like to read the document.

   c. Click **Go**.

      The Cisco Limited Warranty and Software License page from the Information Packet appears.

   d. Read the document online, or click the **PDF** icon to download and print the document in PDF format (Adobe Portable Data File).

      Note You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: http://www.adobe.com

3. To read translated and localized warranty information about your product, follow these steps:

   a. Enter this part number in the Warranty Document Number field:

      78-10747-01C0

   b. Select the language in which you would like to view the document.

   c. Click **Go**.

      The Cisco warranty page appears.

   d. Read the document online, or click the **PDF** icon to download and print the document in PDF format (Adobe Portable Data File).

You can also contact the Cisco service and support website for assistance:

http://www.cisco.com/public/Support_root.shtml.

Duration of Hardware Warranty

One (1) Year

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of a Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference.

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

http://www.cisco.com/go/subscription

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can send your comments in e-mail to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance.

Cisco TAC Website

The Cisco TAC website (http://www.cisco.com/tac) provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year.

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

http://tools.cisco.com/RPF/register/register.do

Opening a TAC Case

The online TAC Case Open Tool (http://www.cisco.com/tac/caseopen) is the fastest way to open P3 and P4 cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For P1 or P2 cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide, and the Internetworking Design Guide. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/go/packet

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/en/US/learning/index.html

This document is to be used in conjunction with the *Cisco Content Engine 510 and 565 Hardware Installation Guide*.